WHAT IS CLAIMED IS:

1. A hard disk drive energy recovery circuit, comprising:

a spindle resolver that generates transition signals as a spindle motor of said hard disk drive rotates among angular regions;

a spindle region state machine, coupled to said spindle resolver, that receives said transition signals and generates rectifier drive signals based thereon; and

a synchronous rectifier, coupled to said spindle region state machine, that employs said rectifier drive signals to recover electrical energy from said motor.

2. The circuit as recited in Claim 1 wherein said spindle region state machine latches said rectifier drive signals.

3. The circuit as recited in Claim 1 wherein said spindle resolver employs comparators to generate said transition signals.

4. The circuit as recited in Claim 1 wherein said transition signals represent six angular regions.

5. The circuit as recited in Claim 1 wherein said rectifier drive signals control only low side switches of a half H-bridge of said synchronous rectifier.

6. The circuit as recited in Claim 1 wherein said rectifier drive signals control power dmos transistors coupled to windings of said motor.

7. The circuit as recited in Claim 1 wherein said spindle region state machine generates equivalent rectifier drive signals for different angular regions.

8. A method of recovering electrical energy from a motor of a hard disk drive, comprising:

generating transition signals as a spindle of said motor rotates among angular regions;

generating rectifier drive signals based on said transition signals; and

employing said rectifier drive signals to recover electrical energy from said motor.

9. The method as recited in Claim 8 further comprising latching said rectifier drive signals.

10. The method as recited in Claim 8 wherein comparators are employed for said generating said transition signals.

11. The method as recited in Claim 8 further comprising generating said transition signals to represent six angular regions.

12. The method as recited in Claim 8 further comprising employing said rectifier drive signals to control only low side switches of a half H-bridge of a synchronous rectifier.

13. The method as recited in Claim 8 wherein said rectifier drive signals control power dmos transistors coupled to windings of said motor.

14. The method as recited in Claim 8 further comprising generating equivalent rectifier drive signals for different angular regions.

15. A hard disk drive, comprising:

a motor having a spindle;

a storage medium coupled to said spindle for rotation thereby; and

a hard disk drive energy recovery circuit, including:

a spindle resolver that generates transition signals as said spindle rotates among angular regions;

a spindle region state machine, coupled to said spindle resolver, that receives said transition signals and generates rectifier drive signals based thereon; and

a synchronous rectifier, coupled to said spindle region state machine, that employs said rectifier drive signals to recover electrical energy from said motor.

16. The hard disk drive as recited in Claim 15 wherein said spindle region state machine latches said rectifier drive signals.

17. The hard disk drive as recited in Claim 15 wherein said spindle resolver employs comparators to generate said transition signals.

18. The hard disk drive as recited in Claim 15 wherein said transition signals represent six angular regions.

19. The hard disk drive as recited in Claim 15 wherein said rectifier drive signals control only low side switches of a half H-bridge of said synchronous rectifier.

20. The hard disk drive as recited in Claim 15 wherein said rectifier drive signals control power dmos transistors coupled to windings of said motor.

21. The hard disk drive as recited in Claim 15 wherein said spindle region state machine generates equivalent rectifier drive signals for different angular regions.